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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/848,509	05/03/2001	William S. Wheat	8540G-000008	7572

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EXAMINER	
WILLS, MONIQUE M	

ART UNIT	PAPER NUMBER
1746	4

DATE MAILED: 11/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/848,509	WHEAT ET AL.	
	Examiner	Art Unit	
	Wills M Monique	1746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 May 2001* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 16-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "a second inlet", of claim 16, renders the claim vague and indefinite because the claim does not include "a first inlet". Therefore, it is unclear as to whether the claim has a first inlet and what the first inlet is connected to.

Claim interpretation

Regarding claims 16-20, claim 16 will be interpreted to include a "first inlet". Because claim 16 necessitates a "second inlet" it will be assumed that a first inlet is also required, and that the first inlet is located anywhere in the fuel cell stack.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 3, 5, 16, 17, 18 & 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Voss et al. U.S. Patent 6,106,964.

Voss teaches a humidity control system comprising a gas supply (A), a humidifier 200 including an inlet (B) connected to sad gas supply (A) and an outlet (C), a fuel cell stack 100 including an inlet (D) that is connected to the outlet (C)of said humidifier 200, a bypass line 150 having one end (F) connected between said gas supply (A) and said humidifier 200 and an opposite end (E) connected between said outlet (C) of said humidifier and said inlet (D) of said fuel cell stack and a valve 160 located in the bypass line 150 (claim 1). See figure 1. The valves 160 are inherently restriction valves, by restricting the flow of gas (claims 2 & 17). The inlet to the fuel cell stack may be the cathode flow line or the anode flow line (col. 7, lines 25-32). (claims 5 & 20). The reference also teaches a valve 160(b) located between said gas supply (A) and said inlet (B) of said humidifier (claim 16). The bypass line also has one end (F) connected between said gas supply (A) and valve 160(b) and an opposite end (E) connected between said outlet (C) of said humidifier and said inlet (D) of said fuel cell stack (claim 16). The system may also be a single valve that inherently controls the amount of gas

flowing from the gas supply through the humidifier to the fuel cell stack and through the bypass lint to the fuel cell stack (claims 3 & 18, col. 9, lines 35-45). The system includes a single valve that controls the amount of gas flowing from the gas supply through the humidifier to the fuel cell stack and through the bypass lint to the fuel cell stack (claim 3, col. 9, lines 35-45). Therefore, the claims are anticipated by Voss.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 6, 7, 8 & 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Voss et al. U.S. Patent 6,106,964.

Voss teaches a humidity control system for a fuel cell stack as described hereinabove. The reference also teaches that the inlet to the fuel cell stack may be the cathode flow line or the anode flow line (col. 7, lines 25-32) (claim 10) and a single 30way valve or directional valve (col. 9, lines 35-45) (claim 7). The system may also be a single valve that controls the amount of gas flowing from the gas supply through the humidifier to the fuel cell stack and through the bypass lint to the fuel cell stack (claim 8, col. 9, lines 35-45).

The reference is silent to the valve being located in the end of bypass line connected between the gas supply and humidifier (claim 6).

However, it would have been obvious to one skilled in the art at the time the invention was made to employ the valve at the end of the bypass line between the gas supply and humidifier since it has been held that rearranging parts of an invention involves only routine skill in the art. In re Japikse, 86 USPQ 70.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 11-13 & 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Voss et al. U.S. Patent 6,106,964.

Voss teaches a humidity control system for a fuel cell stack as described hereinabove. The reference also teaches that the inlet to the fuel cell stack may be the cathode flow line or the anode flow line (col. 7, lines 25-32) (claim 15) and a single 30way valve or directional valve (col. 9, lines 35-45) (claim 12). The system may also be a single valve that controls the amount of gas flowing from the gas supply through

the humidifier to the fuel cell stack and through the bypass lint to the fuel cell stack (claim 13, col. 9, lines 35-45).

The reference is silent to the valve being located in the end of the bypass line connected between the humidifier and fuel cell (claim 11).

However, it would have been obvious to one skilled in the art at the time the invention was made to employ the valve at the end of the bypass line between the humidifier and fuel cell stack since it has been held that rearranging parts of an invention involves only routine skill in the art. In re Japikse, 86 USPQ 70.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 21, 22, 23 & 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Voss et al. U.S. Patent 6,106,964.

Voss teaches a humidity control system for a fuel cell stack as described hereinabove. The reference also teaches that the inlet to the fuel cell stack may be the cathode flow line or the anode flow line and that the valve is a restriction valve (claim 22). (col. 7, lines 25-32) (claim 25). The system may also be a single valve that

controls the amount of gas flowing from the gas supply through the humidifier to the fuel cell stack and through the bypass lint to the fuel cell stack (claim 23, col. 9, lines 35-45).

The reference is silent to the valve being located out of the bypass line but between the humidifier and fuel cell stack (claim 21).

However, it would have been obvious to one skilled in the art at the time the invention was made to employ the valve outside the bypass line but between the humidifier and the fuel cell stack since it has been held that rearranging parts of an invention involves only routine skill in the art. In re Japikse, 86 USPQ 70.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 4, 9,14,19 & 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Voss et al. U.S. Patent 6,106,964, in view of Kanai et al. U.S. Pub. 2001/0021468.

Voss teaches a humidity control system for a fuel cell stack as described hereinabove.

The reference is silent to a humidity sensor and a controller connected to said humidity sensor.

Kanai teaches that it is conventional to employ a humidity sensor and controller to adjust the amount of water in the air supply to the fuel cell (228) to prevent insufficient amount of humidification during normal operation of the fuel cell (par. 00150).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the humidity sensor and controller of Kanai in the system Voss, in order to adjust the amount of water in the air supply to the fuel cell to prevent insufficient amounts of humidification during normal operation of the fuel cell.

Conclusions

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Katagiri et al. U.S. Pub. 2001/0010875 teaches a humidification system for a fuel cell. Suzuki et al. U.S. Pub. 2001/0010872 teaches a fuel cell humidifying system.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Monique Wills whose telephone number is (703) 305-0073. The Examiner can normally be reached on Monday-Friday from 8:30am to 5:00 pm.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0661.

If attempts to reach Examiner by telephone are unsuccessful, the Examiner's supervisor, Randy Gulakowski, may be reached at 703-308-4333.

The unofficial fax number is (703) 305-3599. The Official fax number for non-final amendments is 703-872-9310. The Official fax number for after final amendments is 703-872-9311.

Mw

10/03/03

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